

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER: _____**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

Refine Search

Search Results -

Terms	Documents
generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	1

Database:

US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

L1

Refine Search

Recall Text

Clear

Interrupt

Search History

DATE: Thursday, September 09, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u>	<u>Name</u>	<u>Query</u>		<u>Hit Count</u>	<u>Set Name</u>
side by side					result set
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR					
L1	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process			1	L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	0

Database: US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search: L2

Search History

DATE: Thursday, September 09, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u>	<u>Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
	side by side			result set
DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	L2	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	0	L2
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR	L1	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	1	L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
(709/200 709/201 709/217 709/218 709/219 709/226 710/301 710/2 710/100 710/105 710/305 710/8 710/9 710/10 711/100 711/147 711/202 711/203 379/201.1).ccls.	16903

Database:	US Pre-Grant Publication Full-Text Database US Patents Full-Text Database US OCR Full-Text Database EPO Abstracts Database JPO Abstracts Database Derwent World Patents Index IBM Technical Disclosure Bulletins
Search:	<input style="width: 80%; border: 1px solid black; height: 20px; margin-bottom: 5px;" type="text" value="L4"/> <div style="display: flex; justify-content: space-between; align-items: center;"> Refine Search Recall Text Clear Interrupt </div>

Search History

DATE: Thursday, September 09, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u>	<u>Hit</u>	<u>Set</u>
<u>Name</u>	<u>Count</u>	<u>Name</u>
side by side		result set
<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L4</u> 710/301,2,100,105,305,8- 10;711/100,147,202,203;379/201.1;709/200,201,217-219,226.cccls.	16903	<u>L4</u>
<u>L3</u> ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	11	<u>L3</u>
<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<u>L2</u> generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	0	<u>L2</u>
<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L1</u> generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	1	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
L3 and L4	1

Database:	US Pre-Grant Publication Full-Text Database US Patents Full-Text Database US OCR Full-Text Database EPO Abstracts Database JPO Abstracts Database Derwent World Patents Index IBM Technical Disclosure Bulletins
Search:	<input style="width: 80%; border: 1px solid black; height: 20px; margin-bottom: 5px;" type="text" value="L5"/> <div style="display: flex; justify-content: space-between; width: 100%;"> Refine Search Recall Text Clear Interrupt </div>

Search History

DATE: Thursday, September 09, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u>		<u>Hit</u>	<u>Set</u>
<u>Name</u>	<u>Query</u>	<u>Count</u>	<u>Name</u>
side by side			result set
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR			
<u>L5</u>	l3 and L4	1	<u>L5</u>
<u>L4</u>	710/301,2,100,105,305,8- 10;711/100,147,202,203;379/201.1;709/200,201,217-219,226.ccls.	16903	<u>L4</u>
<u>L3</u>	((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	11	<u>L3</u>
DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
<u>L2</u>	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	0	<u>L2</u>
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR			
<u>L1</u>	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	1	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
L1 or L5	1

Database:	US Pre-Grant Publication Full-Text Database US Patents Full-Text Database US OCR Full-Text Database EPO Abstracts Database JPO Abstracts Database Derwent World Patents Index IBM Technical Disclosure Bulletins
-----------	--

Search:	<input style="width: 100%; height: 30px; border: 1px solid black; padding: 2px;" type="text" value="L6"/>	<input style="border: 1px solid black; padding: 2px; font-size: small;" type="button" value="Refine Search"/>	
	<input style="border: 1px solid black; padding: 2px; font-size: small;" type="button" value="Recall Text"/>	<input style="border: 1px solid black; padding: 2px; font-size: small;" type="button" value="Clear"/>	<input style="border: 1px solid black; padding: 2px; font-size: small;" type="button" value="Interrupt"/>

Search History

DATE: Thursday, September 09, 2004 [Printable Copy](#) [Create Case](#)

Set	Query	Hit Count	Set Name
side by side			result set
<u>L6</u>	DB=PGPB,USPT,USOC; PLUR=YES; OP=OR L6 l1 or L5	1	<u>L6</u>
<u>L5</u>	L5 l3 and L4	1	<u>L5</u>
<u>L4</u>	710/301,2,100,105,305,8- 10;711/100,147,202,203;379/201.1;709/200,201,217-219,226.ccls.	16903	<u>L4</u>
<u>L3</u>	((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	11	<u>L3</u>
	DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
<u>L2</u>	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	0	<u>L2</u>
	DB=PGPB,USPT,USOC; PLUR=YES; OP=OR		
<u>L1</u>	generat\$3 same ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	1	<u>L1</u>

END OF SEARCH HISTORY

EAST - [Untitled1:1]

File View Edit Tools Window Help



Drafts
Pending
Active
L1: (5) ((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process
Failed
Saved
Favorites
Tagged (0)
UDC
Queue
Trash

Search List Browse Queue Clear
DBs USPAT Plurals

BRS I... IS&R... Image Text HTML

Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Err
1	BRS	L1	5	((logical or virtual) adj1 (ID or identification or number)) same quer\$3 same process	USPAT	2004/09/09 17:14		0

Start | Proxima SSO | EAST - [Untitled1:1] |

EAST - [Untitled1:1]

File View Edit Tools Window Help



- Drafts
- Pending
- Active
 - L1: (5) ((logical or virtual)
 - Failed
 - Saved
 - Favorites
 - Tagged (0)
 - UDC
 - Queue
 - Trash

DBs: USPAT

 Plurals Highlight all hit terms initially

((logical or virtual) adj1 (ID or identification or number))
same quer\$3 same process

U	I	Document ID	Issue Date	Pages	Title	Current OR	Current XRef	R
1	<input type="checkbox"/>	US 6018733 A	20000125	14	Methods for iteratively and interactively performing	707/3	707/1; 707/102;	
2	<input type="checkbox"/>	US 5983216 A	19991109	14	Performing automated document collection and	707/2	707/3; 707/4;	
3	<input type="checkbox"/>	US 5915008 A	19990622	22	System and method for changing advanced	379/221.08	370/352; 370/466;	
4	<input type="checkbox"/>	US 5845278 A	19981201	13	Method for automatically selecting collections to	707/3	707/1; 707/102;	
5	<input type="checkbox"/>	US 5692033 A	19971125	19	AIN queuing for call-back system	379/67.1	379/209.01; 379/210.01;	

 Proxima SSO



Welcome to IEEE Xplore®

- Home
- What Can I Access?
- Log-out

Tables of Contents

- Journals & Magazines
- Conference Proceedings
- Standards

Search

- By Author
- Basic
- Advanced

Member Services

- Join IEEE
- Establish IEEE Web Account
- Access the IEEE Member Digital Library

IEEE Enterprise

- Access the IEEE Enterprise File Cabinet

Print Format

Your search matched **13** of **1069805** documents.
A maximum of **500** results are displayed, **15** to a page, sorted by **Relevance Descending** order.

Refine This Search:

You may refine your search by editing the current search expression or enter a new one in the text box.

Check to search within this result set

Results Key:

JNL = Journal or Magazine **CNF** = Conference **STD** = Standard

= Your access to full-text

1 A parallel execution model of logic programs

Chen, A.C.; Wu, C.-I.;

Parallel and Distributed Systems, IEEE Transactions on , Volume: 2 , Issue: 1
1991

Pages:79 - 92

[Abstract] [\[PDF Full-Text \(1372 KB\)\]](#) **IEEE JNL**

2 On context-based naming in information bases

Theodorakis, M.; Constantopoulos, P.;

Cooperative Information Systems, 1997. COOPIS '97., Proceedings of the Second International Conference on , 24-27 June 1997

Pages:140 - 149

[Abstract] [\[PDF Full-Text \(904 KB\)\]](#) **IEEE CNF**

3 GENESIS: generation of E-population based on statistical informatic

Hyewon Seo; Yahia-Cherif, L.; Goto, T.; Magnenat-Thalmann, N.;

Computer Animation, 2002. Proceedings of , 19-21 June 2002

Pages:81 - 85

[Abstract] [\[PDF Full-Text \(670 KB\)\]](#) **IEEE CNF**

4 Analog to digital and digital to analog conversion based on stochastic logic

Ortega, J.G.; Janer, C.L.; Quero, J.M.; Franquelo, L.G.; Pinilla, J.; Serrano, J.

Industrial Electronics, Control, and Instrumentation, 1995., Proceedings of the 1995 IEEE IECON 21st International Conference on , Volume: 2 , 6-10 Nov. 1

Pages:995 - 999 vol.2

[Abstract] [PDF Full-Text (320 KB)] IEEE CNF

5 Object-Oriented mediator queries to XML data

Lin, H.; Risch, T.; Katchaounov, T.;

Web Information Systems Engineering, 2000. Proceedings of the First International Conference on , Volume: 2 , 19-21 June 2000

Pages:39 - 46 vol.2

[Abstract] [PDF Full-Text (536 KB)] IEEE CNF

6 Consistent view removal in transparent schema evolution systems

Crestana-Taube, V.; Rundensteiner, E.A.;

Research Issues in Data Engineering, 1996. Interoperability of Nontraditional Database Systems. Proceedings. Sixth International Workshop on , 26-27 Feb 1996

Pages:138 - 147

[Abstract] [PDF Full-Text (896 KB)] IEEE CNF

7 Proceedings EC-VIP-MC 2003. 4th EURASIP Conference focused on Video/Image Processing and Multimedia Communications (IEEE Cat. No.03EX667)

Video/Image Processing and Multimedia Communications, 2003. 4th EURASIP Conference focused on , Volume: 1 , 2-5 July 2003

[Abstract] [PDF Full-Text (416 KB)] IEEE CNF

8 Virtual remote sensing: a holistic modeling approach

Durbha, S.S.; King, R.L.; Wasson, L.; Pradhan, P.;

Geoscience and Remote Sensing Symposium, 2002. IGARSS '02. 2002 IEEE International , Volume: 2 , 24-28 June 2002

Pages:723 - 725 vol.2

[Abstract] [PDF Full-Text (373 KB)] IEEE CNF

9 Exploiting upper and lower bounds in top-down query optimization

Shapiro, L.; Maier, D.; Benninghoff, P.; Billings, K.; Fan, Y.; Hatwal, K.; Wan, Zhang, Y.; Wu, H.-M.; Vance, B.;

Database Engineering & Applications, 2001 International Symposium on. , 16 July 2001

Pages:20 - 33

[Abstract] [PDF Full-Text (1128 KB)] IEEE CNF

10 The scalability of an object descriptor architecture OODBMS

Yu, K.K.; Lee, B.S.; Olson, M.R.;

Database Engineering and Applications, 1999. IDEAS '99. International Symp Proceedings , 2-4 Aug. 1999

Pages:370 - 377

[Abstract] [PDF Full-Text (108 KB)] IEEE CNF

11 The power of reflective relational machines*Abiteboul, S.; Papadimitrou, C.H.; Vianu, V.;*

Logic in Computer Science, 1994. LICS '94. Proceedings., Symposium on , 4-1994

Pages:230 - 240

[\[Abstract\]](#) [\[PDF Full-Text \(904 KB\)\]](#) [IEEE CNF](#)**12 Dynamic finite versioning: an effective versioning approach to concurrent transaction and query processing***Wu, K.-L.; Yu, P.S.; Chen, M.-S.;*

Data Engineering, 1993. Proceedings. Ninth International Conference on , 19-April 1993

Pages:577 - 586

[\[Abstract\]](#) [\[PDF Full-Text \(860 KB\)\]](#) [IEEE CNF](#)**13 Design and implementation of a plasma area information system***Fresonke, D.A.; Beachy, M.; Meador, M.S.;*

Semiconductor Manufacturing Science Symposium, 1989. ISMSS 1989., IEEE International , 22-24 May 1989

Pages:108 - 113

[\[Abstract\]](#) [\[PDF Full-Text \(592 KB\)\]](#) [IEEE CNF](#)

Welcome to IEEE Xplore®

- Home
- What Can I Access?
- Log-out

Tables of Contents

- Journals & Magazines
- Conference Proceedings
- Standards

Search

- By Author
- Basic
- Advanced

Member Services

- Join IEEE
- Establish IEEE Web Account
- Access the IEEE Member Digital Library

IEEE Enterprise

- Access the IEEE Enterprise File Cabinet

 Print Format

Search Results [PDF FULL-TEXT 896 KB] PREV NEXT DOWNLOAD CITATION



Consistent view removal in transparent schema evc systems

Crestana-Taube, V. Rundensteiner, E.A.

Dept. of Electr. Eng. & Comput. Sci., Michigan Univ., Ann Arbor, MI, USA;

*This paper appears in: Research Issues in Data Engineering, 1996.***Interoperability of Nontraditional Database Systems. Proceedings. Si International Workshop on**

Meeting Date: 02/26/1996 - 02/27/1996

Publication Date: 26-27 Feb. 1996

Location: New Orleans, LA USA

On page(s): 138 - 147

Reference Cited: 13

Inspec Accession Number: 5250281

Abstract:

We have developed the transparent schema evolution (TSE) system that, sim schema evolution using object-oriented views, allows for the interoperability applications with diverse and even changing requirements. TSE relieves users of making existing application programs obsolete when run against the modifi because the old view schema is maintained while a new view schema is gene capture the changes desired by the user. However TSE may be generating a number of schema versions (object-oriented view schemata) over time, resu excessive build-up of classes and underlying object instances-some of which potentially no longer be in use. We propose to solve this problem by developi techniques for effective and consistent schema removal. First, we characterize potential problems of schema consistency that could be caused by removal of virtual class; and then outline our solution approach for each of these proble we demonstrate that view schema removal is sensitive to the order in which i classes are processed. Our solution to this problem is the development of a graph model for capturing the class relationships, used as a foundation for se among removal sequences. Designed to optimize the performance of the TSE effective schema version removal, the proposed techniques will enable more interoperability among evolving software applications

Index Terms:

database theory graph theory object-oriented databases open systems query proc

[software performance evaluation](#) [application programs](#) [consistent view removal](#) [depe](#)
[graph model](#) [interoperability](#) [object instances](#) [object-oriented database](#) [object-orien](#)
[performance](#) [schema consistency](#) [schema removal](#) [schema version removal](#) [transp](#)
[evolution systems](#) [view schema](#) [view schema removal](#) [virtual class](#)

Documents that cite this document

There are no citing documents available in IEEE Xplore at this time.

[Search Results](#) [\[PDF FULL-TEXT 896 KB\]](#) [PREV](#) [NEXT](#) [DOWNLOAD CITATION](#)

[Home](#) | [Log-out](#) | [Journals](#) | [Conference Proceedings](#) | [Standards](#) | [Search by Author](#) | [Basic Search](#) | [Advanced Search](#) | [Join IEEE](#) | [Web Account](#) |
[New this week](#) | [OPAC Linking Information](#) | [Your Feedback](#) | [Technical Support](#) | [Email Alerting](#) | [No Robots Please](#) | [Release Notes](#) | [IEEE Online](#)
[Publications](#) | [Help](#) | [FAQ](#) | [Terms](#) | [Back to Top](#)

Copyright © 2004 IEEE — All rights reserved

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)**End of Result Set** [Generate Collection](#) [Print](#)

L6: Entry 1 of 1

File: USPT

Jun 22, 1999

DOCUMENT-IDENTIFIER: US 5915008 A

TITLE: System and method for changing advanced intelligent network services from customer premises equipment

Detailed Description Text (48):

According to the present invention, a service creation system, such as the SPACE system 54 or an Operational Support System, provisions the NAP 11, the firewall server 40, also referred to as the proxy server, and preferably the ISCP, to route a call to a predetermined virtual number to be terminated to the firewall server. The access server 48 is provided with the protocol translation information to convert the CPE format transaction data to the interface protocols of the programmable nodes of the AIN network. The firewall server is also provisioned with the security access information to enable limited access by the customer premises equipment to the access server 48. After the link between the CPE and the access server is connected, the access server initiates a session with the CPE to receive the service request. After receiving the service request, the access server returns an acknowledgement to the CPE and processes the request by performing the routing and translation functions. If necessary, the access server suspends the call with the CPE and generates a TCAP query message to the ISCP in order to obtain additional call processing data. After the access server has processed the service request by translating the service request and the transaction data stored therein, the access server outputs the translated service request to the appropriate AIN elements in the corresponding protocol(s).

Current US Cross Reference Classification (5):

709/200

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)**End of Result Set**
 [Generate Collection](#) [Print](#)

L6: Entry 1 of 1

File: USPT

Jun 22, 1999

US-PAT-NO: 5915008

DOCUMENT-IDENTIFIER: US 5915008 A

TITLE: System and method for changing advanced intelligent network services from customer premises equipment

DATE-ISSUED: June 22, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dulman; Scott	Arlington	VA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Bell Atlantic Network Services, Inc.	Arlington	VA			02	

APPL-NO: 08/ 538935 [PALM]

DATE FILED: October 4, 1995

INT-CL: [06] H04 M 3/00, G06 F 17/30

US-CL-ISSUED: 379/201; 379/220, 370/466, 395/187.01, 395/200.3

US-CL-CURRENT: 379/221.08; 370/352, 370/466, 379/221.09, 379/230, 709/200

FIELD-OF-SEARCH: 395/200.01, 395/200.02, 395/200.18, 395/187.01, 395/200.3, 395/200.76, 395/609, 395/610, 395/200.6, 370/467, 370/466, 379/220, 379/201, 379/211, 379/212, 707/9, 707/10

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>4855905</u>	August 1989	Estrada et al.	395/500
<input type="checkbox"/> <u>5241588</u>	August 1993	Babson, III et al.	379/201
<input type="checkbox"/> <u>5247571</u>	September 1993	Kay et al.	379/207
<input type="checkbox"/> <u>5377186</u>	December 1994	Wegner et al.	370/220
<input type="checkbox"/> <u>5436957</u>	July 1995	McConnell	379/88
<input type="checkbox"/> <u>5467388</u>	November 1995	Redd, Jr. et al.	379/196

<input type="checkbox"/>	<u>5570420</u>	October 1996	Bress et al.	379/220
<input type="checkbox"/>	<u>5572579</u>	November 1996	Orriss et al.	379/142
<input type="checkbox"/>	<u>5572583</u>	November 1996	Wheeler, Jr. et al.	379/207
<input type="checkbox"/>	<u>5579384</u>	November 1996	Seymour	379/243
<input type="checkbox"/>	<u>5583920</u>	December 1996	Wheeler, Jr.	379/88.01
<input type="checkbox"/>	<u>5623601</u>	April 1997	Vu	395/187.01
<input type="checkbox"/>	<u>5678041</u>	October 1997	Baker et al.	395/188.01
<input type="checkbox"/>	<u>5699513</u>	December 1997	Feigen et al.	395/187.01
<input type="checkbox"/>	<u>5724355</u>	March 1998	Bruno et al.	370/401
<input type="checkbox"/>	<u>5793980</u>	August 1998	Glaser et al.	395/200.61

OTHER PUBLICATIONS

Peter A. Russo, Advanced Intelligent Network Service Model, Communications, Apr. 1990. ICC '90, vol. 1, pp. 197-205.

Robert Epley, Advanced Intelligent Network Services Evolution, Communications, Apr. 1990, ICC '90, vol. 1, pp. 206-212.

James J. Garrahan, et al., Intelligent Network Overview, IEEE Communication Magazine, vol. 31, Issue .3, pp. 30-36, Mar. 1993.

Venkata . C, Majeti, et al., Advanced Intelligent Network Directions, IEEE Global Telecommunications Conference, GLOBECOM '93, vol. 3, pp. 1938-1943, Dec. 1993.

ART-UNIT: 271

PRIMARY-EXAMINER: Chan; Eddie P.

ASSISTANT-EXAMINER: Kim; Hong

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An arrangement (apparatus and method) for enabling subscribers to use an advanced intelligent network (AIN) services to use existing customer premises equipment to remotely provision their services. Subscribers use existing customer premises equipment, such as personal computers, to locally generate transaction data corresponding to AIN services. The transaction data is stored at the customer premises site in a conventional format, such as ASCII. A call from the customer premises equipment is routed to a security access server, also referred to as a firewall server. After complying with the appropriate security protocols, the service request including the transaction data is routed by the firewall server to an access server via a packet switched network. The access server receives the service request from the customer premises equipment in the conventional format. The access server translates the service request into one or more protocols used by network elements that provide the requested service. The access server routes the translated service requests to various AIN elements as needed to implement the service request, for example integrated service control point (ISCP) and one or more central office switches. The disclosed arrangement is particularly effective for AIN service applications requiring user input of a large amount of transaction data, such as a portable number calling application.

27 Claims, 9 Drawing figures



US005692033A

United States Patent [19]

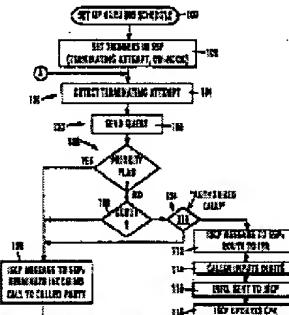
Farris

[11] Patent Number: 5,692,033**[12] Date of Patent:** Nov. 25, 1997**[54] AIN QUEUING FOR CALL-BACK SYSTEM****[75] Inventor:** Robert D. Farris, Sterling, Va.**[73] Assignee:** Bell Atlantic Network Services, Inc., Arlington, Va.**[21] Appl. No.:** 389,360**[22] Filed:** Jan. 22, 1996**[51] Int. Cl.:** H04M 3/00**[52] U.S. Cl.:** 379/67; 379/201; 379/209; 379/207; 379/265**[58] Field of Search:** 379/265, 266, 379/207, 201, 216, 309, 67, 88, 89, 209, 208, 214**[56] References Cited****U.S. PATENT DOCUMENTS**

4,878,240	10/1989	Lin et al.	379/67
4,933,204	8/1990	Cushing, Jr. et al.	379/266
5,212,727	5/1993	Bunkum	379/221
5,247,571	9/1993	Kay	379/207
5,268,937	12/1993	Altweck	379/67
5,278,858	1/1994	Cundroy et al.	379/266
5,303,301	4/1994	Tukuhara	379/142
5,309,505	5/1994	Silano et al.	379/68
5,311,574	5/1994	Livance	379/88
5,311,589	5/1994	Pinedas	379/209
5,425,091	6/1995	Josephs	379/201
5,436,957	7/1995	McConell	379/88
5,444,774	8/1995	Pinedas	379/266
5,452,350	9/1995	Reynolds et al.	379/265
5,467,384	11/1995	Reddit, Jr. et al.	379/207

Primary Examiner—Krista M. Zelic**Assistant Examiner—Daniel S. Hunter****Attorney, Agent, or Firm—Lowe, Price, LeBlanc & Becker****[37] ABSTRACT**

An arrangement in an intelligent network for queuing incoming calls to a destination number during peak calling times and initiating call-backs based on the order that the incoming calls were originally placed in the queue. Translation tables in a subscriber's telephone switching office have terminate attempt triggers and disconnect triggers set to the subscriber's number. A disconnect detection trigger generates a query from the telephone switching office to an integrated services control point (ISCP), at which point the ISCP acquires the first caller in the queue and sends a message to the originating office serving the first caller to ring the first caller and the subscriber's number. A call to the subscriber's number triggers a query from the telephone switching office serving the subscriber to the ISCP. If the call is from the first caller in the queue, the ISCP instructs the telephone switching office to connect the call to the subscriber. If the call is not from the first caller in the queue, the ISCP instructs the telephone switching office to route the call to an announcement platform, such as an intelligent peripheral, to collect information regarding adding the calling party to the queue. The announcement platform supplies to the ISCP the collected information, including the calling number and the time of call, and the ISCP adds the collected information to the queue.

19 Claims, 8 Drawing Sheets



US005915008A

United States Patent [19]

Dulman

[11] Patent Number: 5,915,008**[45] Date of Patent:** Jun. 22, 1999**[54] SYSTEM AND METHOD FOR CHANGING
ADVANCED INTELLIGENT NETWORK
SERVICES FROM CUSTOMER PREMISES
EQUIPMENT****[75] Inventor:** Scott Dulman, Arlington, Va.**[73] Assignee:** Bell Atlantic Network Services, Inc.,
Arlington, Va.**[21] Appl. No.:** 08/938,935**[22] Filed:** Oct. 4, 1998**[51] Int. Cl.:** H04M 3/00; G06F 17/30**[52] U.S. Cl.** 379/201; 379/220; 370/466;

395/187.01; 395/200.3

[58] Field of Search 395/200.01, 200.02,
395/200.18, 187.01, 200.3, 200.76, 609,
610, 200.6; 370/457, 456; 379/220, 201,
211, 212; 707/9, 10**[56] References Cited****U.S. PATENT DOCUMENTS**

4,655,905	8/1989	Batreda et al.	395/500
5,241,585	8/1993	Baldwin, III et al.	379/201
5,247,571	9/1993	Kay et al.	379/307
5,377,186	12/1993	Wegner et al.	370/220
5,436,037	7/1993	McConnell	379/98
5,467,388	11/1993	Reed, Jr. et al.	379/196
5,370,420	10/1996	Bates et al.	379/220
5,372,579	11/1996	Orras et al.	379/142
5,372,583	11/1996	Wheeler, Jr. et al.	379/207
5,379,384	11/1996	Seymour	379/243
5,583,920	12/1996	Wheeler, Jr.	379/68.01
5,623,601	4/1997	Va	395/187.01
5,678,041	10/1997	Balaz et al.	395/188.01
5,699,513	12/1997	Feigen et al.	395/187.01
5,724,353	3/1998	Bruno et al.	370/401
5,793,980	8/1998	Glaeser et al.	395/200.61

OTHER PUBLICATIONS

Peter A. Russo, Advanced Intelligent Network Service Model, Communications, Apr. 1990. ICC '90, vol. 1, pp. 197-205.

Robert Boley, Advanced Intelligent Network Services Evolution, Communications, Apr. 1990, ICC '90, vol. 1, pp. 206-212.

James I. Garrison, et al., Intelligent Network Overview, IEEE Communication Magazine, vol. 31, Issue 3, pp. 30-36, Mar. 1993.

Venkata . C. Majeti, et al., Advanced Intelligent Network Directions, IEEE Global Telecommunications Conference, GLOBECOM '93, vol. 3, pp. 1938-1943, Dec. 1993.

Primary Examiner—Eddie P. Chan

Assistant Examiner—Hong Kim
Attorney, Agent, or Firm—McDermott, Will & Emery

[57] ABSTRACT

An arrangement (apparatus and method) for enabling subscribers to use an advanced intelligent network (AIN) services to use existing customer premises equipment to remotely provision their services. Subscribers use existing customer premises equipment, such as personal computers, to locally generate transaction data corresponding to AIN services. The transaction data is stored at the customer premises site in a conventional format, such as ASCII. A call from the customer premises equipment is routed to a security access server, also referred to as a firewall server. After complying with the appropriate security protocols, the service request including the transaction data is routed by the firewall server to an access server via a packet switched network. The access server receives the service request from the customer premises equipment in the conventional format. The access server translates the service request into one or more protocols used by network elements that provide the requested service. The access server routes the translated service requests to various AIN elements as needed to implement the service request, for example integrated service control point (ISCP) and one or more central office switches. The disclosed arrangement is particularly effective for AIN service applications requiring user input of a large amount of transaction data, such as a portable number calling application.

27 Claims, 8 Drawing Sheets

